

Claims

1. Hydraulic servo-steering system comprising a hydraulic servo-valve device and comprising a retroactive device, in particular for motor vehicles, the retroactive device comprising means for hydraulically producing a restoring moment into a central position, which produces the restoring moment as a function of the pressure differential between a pressure side and a low-pressure side, and at least one valve means being provided, which is configured, when pressure is applied in the central position of the servo-valve, for producing a pressure differential between the external chamber and the internal chamber, characterized in that the at least one valve means is arranged hydraulically in series with the retroactive device.
2. Retroactive device according to Claim 1, characterized in that the means for producing a restoring moment comprise a grooved device (7) arranged on the side of the rotary slide and a bush portion (10) arranged on the side of the control bush, the bush portion separating the external hydraulic chamber from the internal hydraulic

chamber, and the bush portion (10) comprising radial guides for retroactive elements (12), which may be pushed into the grooves, for achieving a retroactive torque, under a hydraulic pressure acting radially from the external chamber on deflection of the servo-valve from a central position.

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3. Retroactive device according to either Claim 1 or Claim 2, characterized in that the valve means (13) is an electrically controlled proportional valve.

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4. Retroactive device according to any one of the preceding claims, characterized in that the valve means (13) has a cylindrical housing (14), which comprises a valve member (15), a valve seat (16) and the helical spring (17) and has a fluid channel (19).

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5. Retroactive device according to any one of the preceding claims, characterized in that at least two fluid channels (19), which are opened, one after the other, as the pressure differential between the external chamber (21) and the internal chamber (22) increases, are provided.

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6. Retroactive device according to any one of the preceding claims, characterized in that the pressure differential, during operation

in the central position of the servo-valve, is approximately 5 to 10 bar, but at least 2 bar.

5 7. Retroactive device according to either Claim 1 or Claim 2, characterized in that the valve means (13) is arranged in the hydraulic line (31), in terms of the direction of flow, between the pump (30) and the rotary slide valve (1).

10 8. Retroactive device according to either Claim 1 or Claim 2, characterized in that the valve means (13) is a hydraulically pilot-controlled pressure control valve (45, 46).

15 9. Retroactive device according to either Claim 1 or Claim 2, characterized in that the valve means (13) is an electrically pilot-controlled pressure control valve (46, 47).

20 10. Retroactive device according to any one of the preceding claims, characterized in that a pressure limiting means, in particular a cut-off control slide (38 to 40), precedes the retroactive elements (12).

11. Retroactive device according to any one of the preceding claims, characterized in that an electrically activatable proportional valve (41) precedes the retroactive elements (12).